NATURAL SCIENCES TRIPOS, PART IA,
2019 SUGGESTED READING LIST

We are often asked to make suggestions for preparatory reading and for introducing new subjects that you might be considering. There is no pre-requisite reading that needs to be done, but you may find the following books interesting and informative at a general level. Please note that the books present an initial view of the subject and may not include material covered by the undergraduate course**.**
  * Indicates books in the lists that are the preferred one to read.
You are **NOT** expected to purchase any of the books on this suggested reading list.

Biology of Cells

	Title	Publisher
Lewis Wolpert	*How we live and why we die: the secret lives of cells*	Faber and Faber (paperback)

For those wishing to look at a suitable course textbook beforehand we suggest:

B. Alberts et al	*Molecular Biology of the Cell*	Garland (paperback) (2008) 5th Edition

Although A level Biology is not a requirement for the Biology of Cells Course, if you have done little or no biology before, you may find it helpful to begin with a less advanced textbook. We suggest*:* Alberts, B. et al (2009) *Essential Cell Biology*, 3rd Edition (Garland)

Computer Science

	Title	Publisher
A Kee Dewdney	*The new Turing omnibus*	Computer Sciences Press 1993 (reprinted 2003, Palgrave Macmillan)
Tom W. Körner	*The Pleasures of Counting*	C.U.P. (1996)

http://www.cl.cam.ac.uk/admissions/undergraduate/preparation/

Evolution and Behaviour

	Title	Publisher
Holland, P	*The Animal Kingdom: A very short introduction*	O.U.P. 2011
Dawkins, R.	*The Ancestor's Tale: A Pilgrimage to the Dawn of Life*	Phoenix (2005)

For those wishing to look at a suitable course textbook beforehand we suggest:

Barton, et al	*Evolution*	Cold Spring Harbour Lab. Press (2007)

Chemistry

	Title	Publisher
P.W Atkins	*Molecules*	Scientific American
*J Keeler & P Wothers	***Why Chemical Reactions Happen***	**O.U.P.**

Earth Sciences

	Title	Publisher
*Nield, T	***Supercontinent: Ten Billion Years in the Life of Our Planet***	**Granta 2007**
Benton, M.J.	*When Life Nearly Died*	Thames and Hudson 2008

Materials Science

	Title	Publisher
*Ball, P.	*Made to Measure: New Materials for the 21st Century.*	Princeton University Press
Cotterill, R.M.J.	*The Material World*	C.U.P
Gordon, J.E.	*New Science of Strong Materials*	Penguin

Physics

We strongly recommend that students register (for free) and attempt problem-solving questions on Isaac Physics (isaacphysics.org). Specifically the level 1 to 6 questions in mathematics and physics. https://isaacphysics.org/gameboards?filter=true

There are two books specifically recommended for the Part IA Physics course – these will be available in College libraries. Some lecturers will give references both to relevant sections of these books, and to worked examples in them, which help explain or expand on the material they present in their lectures. This is to encourage you to develop your skills in utilising the more extensive resource material provided in text-books to deepen your understanding of physics.

- Understanding Physics (Second Edition), Mansfield M & O'Sullivan C (Wiley 2011).
- Physics for Scientists and Engineers (Extended Version), Tipler P A & Mosca G (6th Edition, Freeman 2008).

Physiology of Organisms

	Title	Publisher
King, J	*Reaching for the sun*	C.U.P (2nd edition)
Widmaier, EP	*Why Geese don't get obese (and we do)*	W H Freeman

Mathematics

	Title	Publisher
Gowers, T	*Mathematics: a very short introduction*	O.U.P. (2002)
Tom W. Körner	*The Pleasures of Counting*	C.U.P. (1996)
Sivia, DS & Rawlings, SG	*Foundations of Science Mathematics*	O.U.P.

Web links:
Plus magazine: http://plus.maths.org
Stem_nrich for Natural Science Maths: http://nrich.maths.org/6884

Mathematical Biology

We do not recommend any particular books, as there are none covering appropriate material at the correct level that would be suitable for self-study. However we do recommend some revision of the following topics from A Level Mathematics (or equivalent) as they will be used heavily in the first term: exponentials, logarithms, differentiation, integration and curve sketching. If you have studied any statistics at school it would also make sense to look over your notes for that, but if not, do not worry, all statistical material will be taught assuming no prior knowledge.